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10/714,021	11/13/2003	Atsushi Kato	075834.00447	1983
33448	7590	05/29/2007	EXAMINER	
ROBERT J. DEPKE			BERNATZ, KEVIN M	
LEWIS T. STEADMAN			ART UNIT	
ROCKEY, DEPKE, LYONS AND KITZINGER, LLC			PAPER NUMBER	
SUITE 5450 SEARS TOWER			1773	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/714,021

Applicant(s)

KATO ET AL.

Examiner

Kevin M. Bernatz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 5-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Response to Amendment

1. Amendments to claims 1 and 2, filed on April 19, 2007, have been entered in the above-identified application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claims 1 – 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto et al. (U.S. Patent No. 6,045,901) in view of Oguchi et al. (U.S. Patent No. 5,470,645).

Regarding claim 1, Hashimoto et al. disclose a magnetic recording medium (*Title*) comprising a non-magnetic supporter, a lower (i.e. applicants' "first") magnetic layer formed above said non-magnetic supporter and formed from a magnetic paint having a first ferromagnetic material (*col. 3, lines 28 – 37; col. 6, line 65 bridging col. 7, line 15*), and an upper (i.e. applicants' "second") magnetic layer formed above said first magnetic layer and formed from a magnetic paint having a second ferromagnetic material (*col. 3, lines 28 – 37; col. 5, lines 22 – 50; and examples*), wherein the first magnetic layer and the second magnetic layer include polyester polyol having an alicyclic framework (*col. 3, line 46 bridging col. 4, line 47 and examples*) and a polyurethane resin composed of a diisocyanate (*ibid*), wherein a concentration of a

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urethane group in the polyurethane resin ranges from 0.5 mmol/g to 3.0 mmol/g (*col. 5, lines 10 – 14*).

Hashimoto et al. fail to disclose controlling the thickness of the first and second magnetic layers to have thickness values meeting the claimed limitations.

However, Oguchi et al. teach that the thickness of the first and second magnetic layers in a dual layered recording medium can be varied to effect the recording and reproducing characteristics and the durability, wherein the relative thickness values are taught to encompass Applicants' claimed limitations (*Abstract; Examples; col. 4, lines 36 – 53; and col. 12, lines 20 – 34: where the Examiner notes the examples use thickness values of $0.3\ \mu\text{m}$ and $2.5\ \mu\text{m} = 2.8\ \mu\text{m}$, which can be deemed to read on the "approximate" language utilized in the present claims*). Therefore, the Examiner deems that it would have been obvious to one having ordinary skill in the art to determine an amount of the thickness for each of the first and second magnetic layers meeting Applicants' claimed limitations by optimizing the results effective variable through routine experimentation. *In re Boesch*, 205 USPQ 215 (CCPA 1980); *In re Geisler*, 116 F. 3d 1465, 43 USPQ2d 1362, 1365 (Fed. Cir. 1997); *In re Aller*, 220 F.2d, 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Regarding claims 2 and 8, Hashimoto et al. teach that the upper and lower magnetic layers comprise a powder and can be formed in mixing ratios meeting applicants' claimed limitations (*col. 5, line 18 bridging col. 7, line 14*).

Regarding claims 3 and 4, Hashimoto et al. disclose additives meeting the claimed limitations (*examples*).

4. Claims 1 – 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murayama et al. (U.S. Patent No. 6,010,773) in view of Hashimoto et al. ('901) and Oguchi et al. ('645).

Regarding claim 1, Murayama et al. ('773) disclose a magnetic recording medium (*Title*) comprising a non-magnetic supporter, a lower (i.e. applicants' "first") magnetic layer formed above said non-magnetic supporter and formed from a magnetic paint having a first ferromagnetic material (*col. 2, line 59 bridging col. 3, line 16; col. 9, line 7 bridging col. 10, line 27*), and an upper (i.e. applicants' "second") magnetic layer formed above said first magnetic layer and formed from a magnetic paint having a second ferromagnetic material (*col. 2, lines 59 bridging col. 3, line 16; col. 8, lines 33 - 61; and examples*), wherein the first magnetic layer and the second magnetic layer include polyester polyol having an alicyclic framework (*col.4, line 46 bridging col. 7, line 59 and examples*) and a polyurethane resin composed of a diisocyanate (*ibid*)

Murayama et al. ('773) fail to disclose wherein a concentration of a urethane group in the binder resins ranges from 0.5 mmol/g to 3.0 mmol/g.

However, Hashimoto et al. teach controlling the urethane concentration in a urethane binder for magnetic recording media to amounts meeting applicants' claimed range in order to insure adequate mechanical strength and dispersion ability (*col. 5, lines 10 – 14*).

It would, therefore, have been obvious to one of ordinary skill in the art at the time of the applicants' invention to modify the device of Murayama et al. ('773) to use a

urethane concentration meeting applicants' claimed limitations as taught by Hashimoto et al. in order to insure adequate mechanical strength and dispersion ability.

Neither Murayama et al. ('773) or Hashimoto et al. disclose controlling the first and second magnetic layers to have thickness values meeting the claimed limitations.

However, Oguchi et al. teach that the thickness of the first and second magnetic layers in a dual layered recording medium can be varied to effect the recording and reproducing characteristics and the durability, wherein the relative thickness values are taught to encompass Applicants' claimed limitations (*Abstract; Examples; col. 4, lines 36 – 53; and col. 12, lines 20 – 34: where the Examiner notes the examples use thickness values of $0.3\ \mu\text{m}$ and $2.5\ \mu\text{m} = 2.8\ \mu\text{m}$, which can be deemed to read on the "approximate" language utilized in the present claims*). Therefore, the Examiner deems that it would have been obvious to one having ordinary skill in the art to determine an amount of the thickness for each of the first and second magnetic layers meeting Applicants' claimed limitations by optimizing the results effective variable through routine experimentation. *In re Boesch*, 205 USPQ 215 (CCPA 1980); *In re Geisler*, 116 F. 3d 1465, 43 USPQ2d 1362, 1365 (Fed. Cir. 1997); *In re Aller*, 220 F.2d, 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Regarding claims 2 and 8, Murayama et al. ('773) teach that the upper and lower magnetic layers comprise a powder and can be formed in mixing ratios meeting applicants' claimed limitations (*col. 8, line 28 bridging col. 10, line 34*).

Regarding claims 3 and 4, Murayama et al. ('773) disclose additives meeting the claimed limitations (*examples*).

Response to Arguments

5. The rejection of claims 1 – 4 and 8 under 35 U.S.C § 103(a) – Hashimoto et al. in view of Oguchi et al.

6. The rejection of claims 1 – 4 and 8 under 35 U.S.C § 103(a) – Murayama et al. in view of Hashimoto et al. and Oguchi et al.

Applicant(s) arguments have been considered but are moot in view of the new ground(s) of rejection. In so far as they apply to the present rejection of record, applicant(s) argue that the claimed thickness limitations are novel over the prior art. However, the Examiner notes that Oguchi et al. teach a two layered recording structure, wherein the first magnetic layer is taught to be thicker than the second magnetic layer (0.05 – 0.5 μm versus 1 – 3 μm) and the working embodiments in Oguchi et al. can be deemed to meet the “approximately five times greater” and “approximately 3.0 μm ” limitations in the pending claims.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Applicants' amendment resulted in embodiments not previously considered (i.e. the relative thickness limitations) which necessitated the new grounds of rejection, and hence the finality of this action.

8. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Kevin M. Bernatz whose telephone number is (571) 272-1505. The Examiner can normally be reached on M-F, 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KMB
May 23, 2007


Kevin M. Bernatz, PhD
Primary Examiner